

PATENT COOPERATION TREATY

PCT

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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SUISSE

EINGEGANGEN 24. Mai 2004

WRITTEN OPINION
(PCT Rule 66)

Date of mailing (day/month/year)		21.05.2004
Applicant's or agent's file reference E1105-WO		REPLY DUE within 1 month(s) from the above date of mailing
International application No. PCT/EP 02/04153	International filing date (day/month/year) 15.04.2002	Priority date (day/month/year) 08.03.2002
International Patent Classification (IPC) or both national classification and IPC G01N33/58		Termin: 21.6.04
Applicant EIDGENÖSSISCHE TECHNISCHE HOCHSCHULE LIBRARIES...		Eintrag in Fristenliste durch:

- This written opinion is the **second** drawn up by this International Preliminary Examining Authority.
- This opinion contains indications relating to the following items:
 - ☒ Basis of the opinion
 - ☐ Priority
 - ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Lack of unity of invention
 - ☒ Reasoned statement under Rule 66.2(a)(II) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Certain documents cited
 - ☐ Certain defects in the international application
 - ☐ Certain observations on the international application
- The applicant is hereby invited to reply to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
- The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 08.07.2004

Name and mailing address of the international preliminary examining authority:	Authorized Officer
European Patent Office D-80298 Munich Tel: +49 89 23393 - 0 Tx: 523656 epmu d Fax: +49 89 23393 - 4465	Thumb, W
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WRITTEN OPINIONInternational application No. **PCT/EP 02/04153****I. Basis of the opinion**

1. With regard to the elements of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, Pages

1-5, 7-38 as originally filed
6, 6a, 6b received on 09.08.2003 with letter of 07.08.2003

Claims, Numbers

1-33 received on 05.04.2004 with letter of 02.04.2004

Drawings, Sheets

1/0-10/10 as originally filed

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any nucleotide ~~and/or~~ amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
4. The amendments have resulted in the cancellation of:
- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:
5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).
6. Additional observations, if necessary:

WRITTEN OPINIONInternational application No. **PCT/EP 02/04153****V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	1-13
Inventive step (IS)	Claims	14-18,20-25,27-33
Industrial applicability (IA)	Claims	

2. Citations and explanations**see separate sheet**

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Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1.1 The objections under Article 19(2) PCT are withdrawn in view of the amendments and the arguments submitted by the applicant in the letter of reply dated 2.4.2004.

1.2 However, the claims filed with the letter dated 2.4.2004 appear to contravene the provisions of Article 34(2)b) PCT.

Claims 1, 9, 10, and 20 specifically define stretches of oligonucleotides coupled to the chemical moieties as being "non-complementary to any part" of various other first and second molecules.

The specification as originally filed does not contain a specific reference to oligonucleotide sequences being non-complementary to any part of other molecules present in a sample or library of compounds. The figures of the application, in particular figures 1-4, are schematic drawings of the general design of the molecules of the present application and do not directly and unambiguously disclose sequences being "non-complementary to any part" of another molecule. It would therefore appear that said definition should be deleted from the claims in order to meet the requirements of Article 34(2)b) PCT.

2. **Novelty**

2.1 The objection under Article 33(2) PCT raised against claims 1-8 in the previous written opinion is maintained also for the claims in amended form.

Claims 1-8 refer to **isolated chemical compounds**.

As already pointed out under item 2.1 of the first written opinion, the characterising technical features of the chemical compounds of claim 1 are a chemical moiety potentially capable of binding to a target molecule and an oligonucleotide. The different regions of the oligonucleotide part is solely defined by its use (binding to a second molecule, coding for the chemical moiety) and become meaningful only in context of this use. However, since claim 1 explicitly refers to "a chemical compound", i.e. an isolated, individual compound, the only technical features characterising said compound are the chemical moiety and an oligonucleotide attached thereto. Any nucleic acid sequence can potentially serve as a self-assembly moiety as or as a coding sequence, depending on the way it is used.

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Compounds comprising a chemical moiety and an attached oligonucleotide, also of a length sufficient to potentially provide for the functional regions as defined in claim 1, are disclosed in documents D1-D3 (see item 2.1 of the first written opinion).

Therefore, claims 1-8 do not meet the requirements of Article 33(2) PCT.

The examining authority is unable to see a possibility to define an isolated chemical compound according to the present application in a way so as to render it novel over the compounds of documents D1-D3.

These claims should thus be deleted.

- 2.2 The same arguments also apply to the subject-matter of claims 9-13 (corresponding to claims 9-12 which have been the basis of the first written opinion).

Claim 9 pertains to a library of compounds, being characterised by a chemical moiety and an oligonucleotide part. Again, the features of said oligonucleotide parts are only defined by their potential use ("*...being capable of performing a combination reaction with a similar self-assembly moiety...*"). Claim 9 does not even define that the second, similar compound is actually present in said library. Therefore, analogous arguments as put forward under item 2.1 above also apply to the subject-matter of claims 9-13, which consequently do not meet the requirements of Article 33(2) PCT.

3. Inventive step.

- 3.1 The objections under Article 33(3) PCT referring to claims 14-18, 20-25 and 27-33 (corresponding to claims 13-17, 19-24, and 26-32 which have been the basis of the first written opinion) are also maintained.

While by no means wishing to underestimate the value of a publication in the journal Nature Biotechnology, the mere fact of this publication does not automatically provide for a recognition of inventive step without further technical arguments in view of the most pertinent documents of the state of the art. The examining authority wishes to draw the attention of the applicant to item 3.1 of the first written opinion.

In particular the applicant is invited to comment on the teaching of document D1, which was considered to represent the most relevant state of the art, being based on the same principle as the present application. In D1, a multitude of

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combinations of individual members of a substance library are created by binding of oligonucleotides attached to the members of the library (see col. 3, lines 39-52). As already pointed out under item 3.1 of the first written opinion, identifying individual members of a library using oligonucleotide tags does not appear to be inventive in view of documents D2 and D3 and the objective technical problem as defined under item 3.1 of the first written opinion.

In the letter of reply the applicant only commented on the work of the authors of document D3, which is not considered to represent the most relevant state of the art for the assessment of inventive step.

3.2 Claims 19 and 26 meet the requirements of Article 33(3) PCT.

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